

groove is in alignment with a corresponding outer groove to thereby define at least first and second arcuate races;

wherein the diameter of each arcuate race is greater than the diameter of each adjacent arcuate race closer to the first end of the male connector; and

a plurality of ball bearings received in each race to secure said male and female connectors together and to facilitate relative rotation of the male and female connectors about the central axis;

wherein the male and female connectors form a flow passage of the swivel joint; and

wherein the diameters of the races are determined as a function of the radius of the ball bearings and the cross sectional areas of the male and female connectors at at each race.

Remarks

Reconsideration of the above-referenced application is respectfully requested.

A proposed drawing amendment is submitted herewith to correct certain clerical mistakes with the numbering of the elements not previously detected.

Approval of the amendment is respectfully requested.

The specification has been amended to correct certain clerical mistakes and to clarify the discussion of the portion of the invention illustrated in Figures 4A and 4B beginning on page 5, line 30.

Independent claims 1, 13 and 19 have been amended to include limitations regarding the cross-sectional configuration of the inner and outer annular grooves on the male and female connectors. As amended, these claims require the cross

section to have first and second arcuate segments with substantially the same radius but with the centerpoints of the segments offset in a direction parallel to the central axis. This results in a cross section such as illustrated in Figure 4B.

Support for this amendment appears on page 5 of the specification beginning at line 30. Applicants submit that these claims are patentable over the prior art of record and the prior art submitted in the accompanying Information Disclosure Statement filed herewith.

New claims 24-27 have been added to the specification. These claims relate to the feature of the invention wherein the radii of the inner and outer annular grooves, or in other words the diameters of the bearing races, are determined as a function of the radius of the ball bearings and the cross-sectional areas of the male and female members at each race so as to distribute the end loading as nearly evenly as possible among the races within these parameters. Support for these claims is found, e.g., on page 4 of the specification beginning at line 14.

The Examiner has rejected claim 20 under 35 U.S.C. §102(b) as being clearly anticipated by Corsette. Claim 20 has been canceled, although not necessarily because of the instant rejection.

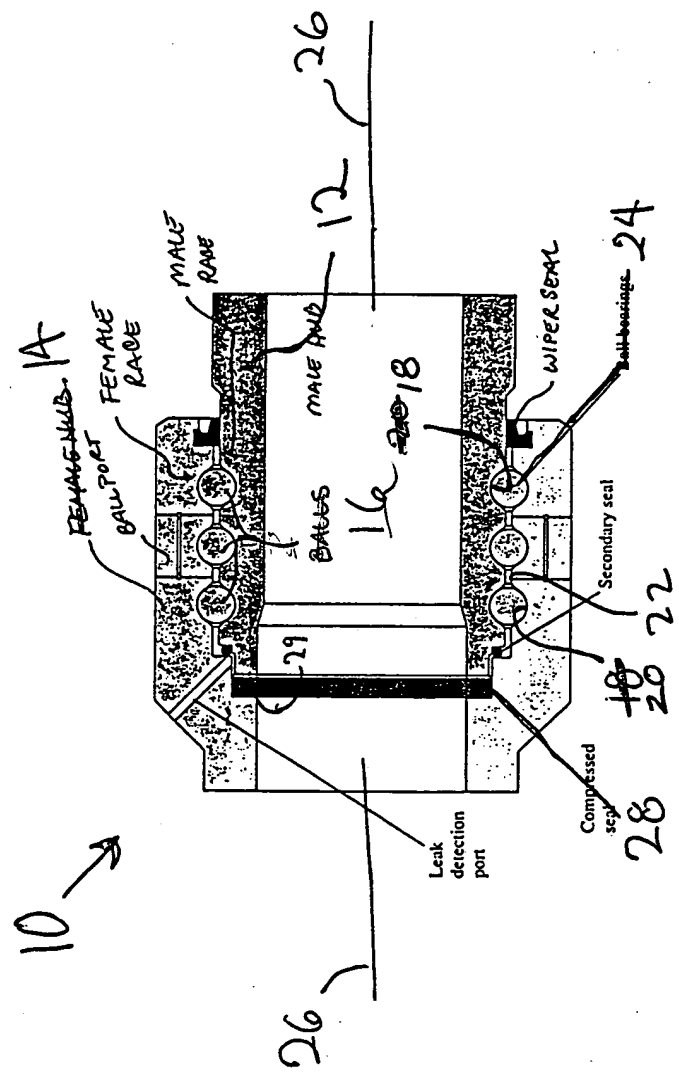
For the foregoing reasons, claims 1, 4, 5, 12-19 and 21-27 are submitted as allowable. Favorable action is solicited.

Respectfully submitted,



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FIG. 1 PRIOR ART

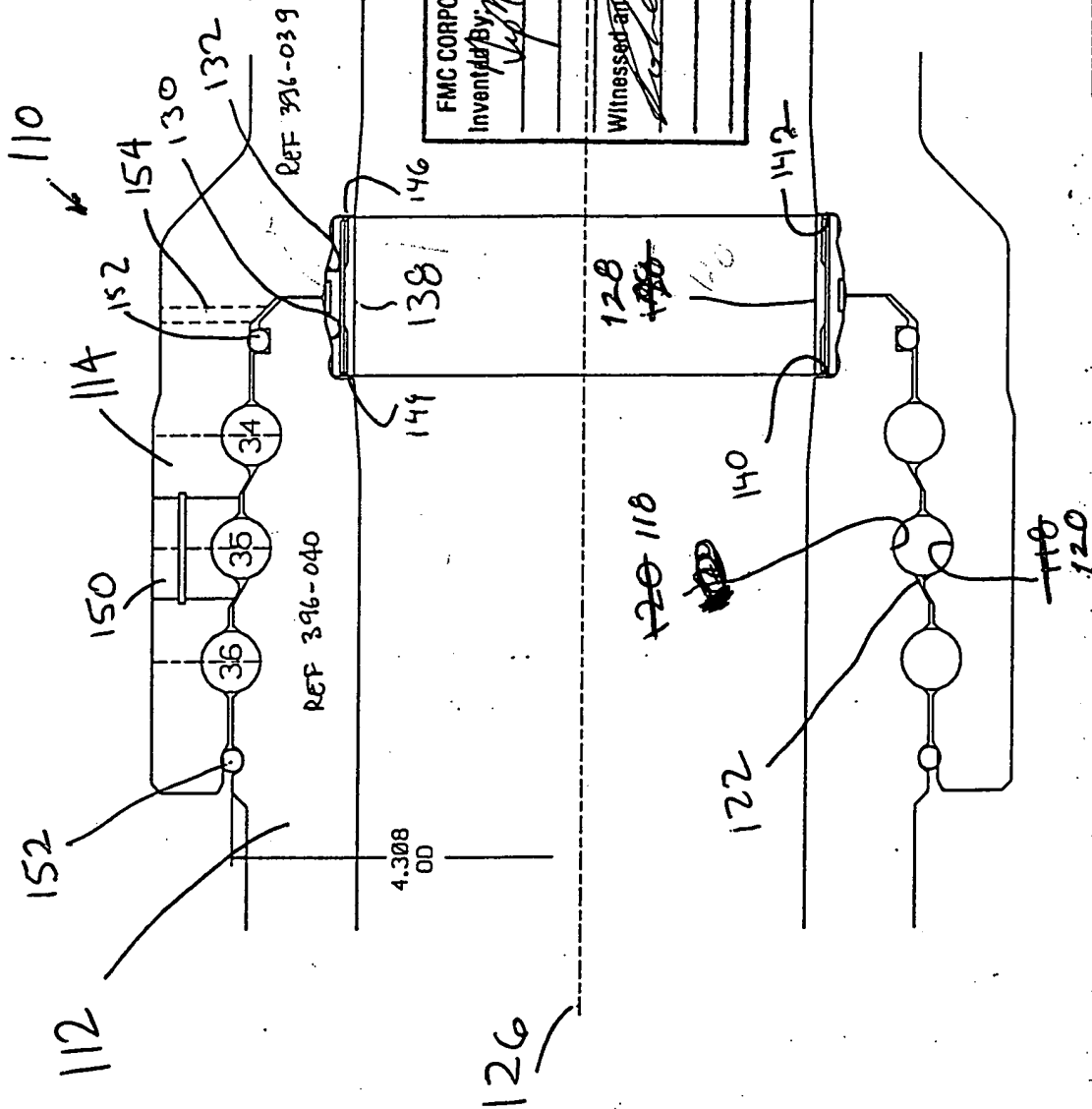


~~FIG. 1 PRIOR ART~~

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UNGCHUSRI ET AL.

FIG. 2



FMC CORPORATION FLUID CONTROL R & D	
Invented By: <i>Ungchusri</i>	Date: <i>31 Mar 94</i>
Witnessed and Understood By: <i>[Signature]</i>	Date: <i>31 Mar 94</i>

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